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We claim

1. A process for preparing impact-modified polystyrene which has  
5 a melt volume flow ratio MVR of at least 8 cm<sup>3</sup>/10 min, measured to EN ISO 1133 at a test temperature of 200°C with a nominal load of 5 kg, by anionic polymerization of styrene in the presence of a styrene-butadiene block copolymer, where  
10 use is made of an organyl alkali metal compound as anionic polymerization initiator, and of an organyl aluminum compound as retarder.
2. A process as claimed in claim 1, where sec-butyllithium is  
15 used as anionic polymerization initiator.
3. A process as claimed in claim 1 or 2, where triisobutylaluminum (TIBA) is used as retarder.
4. A process as claimed in any of claims 1 to 3, where the  
20 anionic polymerization is undertaken in the presence of an initiator composition which is obtainable by mixing sec-butyllithium and styrene, and then adding TIBA.
5. A process for preparing thermoplastic molding compositions  
25 comprising
  - a) from 50 to 99.9% by weight of an anionically polymerized impact-modified polystyrene which is prepared as claimed in any of claims 1 to 4,  
30 and
  - b) from 0.1 to 50% by weight of a rubber-free or impact-modified polystyrene polymerized by an anionic or free-radical route and having a number-average molar mass of not more than 20 000 g/mol, determined by gel  
35 permeation chromatography in tetrahydrofuran.

We claim

1. A process for preparing impact-modified polystyrene which has  
5 a melt volume flow ratio MVR of at least 8 cm<sup>3</sup>/10 min, measured to EN ISO 1133 at a test temperature of 200°C with a nominal load of 5 kg, by anionic polymerization of styrene in the presence of a styrene-butadiene block copolymer, where use is made of an organyl alkali metal compound as anionic  
10 polymerization initiator, and of an organyl aluminum compound as retarder.
2. A process as claimed in claim 1, where sec-butyllithium is  
15 used as anionic polymerization initiator.
3. A process as claimed in claim 1 or 2, where triisobutylaluminum (TIBA) is used as retarder.
4. A process as claimed in any of claims 1 to 3, where the  
20 anionic polymerization is undertaken in the presence of an initiator composition which is obtainable by mixing sec-butyllithium and styrene, and then adding TIBA.
5. A process for preparing thermoplastic molding compositions  
25 comprising
  - a) from 50 to 99.9% by weight of an anionically polymerized impact-modified polystyrene which is prepared as claimed in any of claims 1 to 4,  
30 and
  - b) from 0.1 to 50% by weight of a rubber-free or impact-modified polystyrene polymerized by an anionic or free-radical route and having a number-average molar mass of not more than 20 000 g/mol, determined by gel  
35 permeation chromatography in tetrahydrofuran.